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10/573,707	03/27/2006	Mitsunobu Yoshida	1003510-000165	3545
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EXAMINER HARRIS, GARY D				
ART UNIT		PAPER NUMBER		
1785				
NOTIFICATION DATE		DELIVERY MODE		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/573,707

Applicant(s)

YOSHIDA ET AL.

Examiner

GARY D. HARRIS

Art Unit

1785

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 6-20 is/are pending in the application.
- 4a) Of the above claim(s) 6-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6-20 is/are rejected.
- 7) ☒ Claim(s) 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/GS/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Pre-Appeal

The previous rejection dated 12/01/2009 is withdrawn and a new office action follows:

Claim Objections

Claim 15 is objected to because of the following informalities:

Claim 15 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 1. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). Appropriate correction is required.

Claim Rejections - 35 USC § 102 / 35 USC § 103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2 & 12-20 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Honda et al. JP 2002-260910.

As to Claim 1, Honda discloses a laminate comprising two or more magnetic metal thin plates [0007 & 0025]. Each magnetic metal thin plate being selected from the group consisting of an amorphous metal plate and a nano crystal magnetic plate (magnetic steel sheet (electrical sheet) may be non-directional, 1-directional, 2-way natural (amorphous or crystalline) [0013]) and coated with a high molecular compound (adhesive resin) [0006]. The two or more magnetic metal thin plates are partially in contact with one another (see drawing 2). By applying a pressure the high molecular compound is positioned between the two or more magnetic metal thin plates and is pushed out (pressure is applied at the time of heat pressing, see drawing 2).

Regarding the volume resistivity defined in JIS H 0505 in a direction perpendicular to the high molecular compound surface of the magnetic metal thin plates is from 0.1 Ohm cm to less than 10^8 Ohm cm. Honda discloses the lamination magnetic

steel sheet should provide sufficient resistance between layers and is obtained by having thicknesses of the adhesive between 0.05 and 25 microns [0027].

Given the similarity of materials used (magnetic sheet) and a laminating adhesive (thermoplastic or thermoset resin) which may includes a metallic compound (decomposition accelerator, [0019]) between the plates, the range of volume resistivity from 0.1 Ohm cm (non insulating) to 10^8 (greater than 10^8 is insulating) would inherently be present in the lamination. See MPEP 2112.

Alternatively, a volume resistivity defined by JIS H 0505 in a direction perpendicular to the high molecular compound surface of the magnetic metal thin plates from 0.1 Ohm cm to less than 10^8 Ohm cm would be obvious to one of ordinary skill in the art in order to provide a sufficient resistance to the layered structure in the final product.

As to Claim 2, Honda discloses the laminate high molecular compound layer covers not less than 50% of the area of the two or more magnetic metal thin plates (see drawing 2).

Regarding the volume resistivity defined in JIS H 0505 in a direction perpendicular to the high molecular compound surface of the two or more magnetic metal thin plates is from 1 Ohm cm to less than 10^6 Ohm cm.

Given the similarity of materials used (magnetic sheet) and a laminating adhesive which may includes a metallic compound (decomposition accelerator, [0019]) between the plates, the range of volume resistivity from 0.1 Ohm cm (non insulating) to 10^8 (greater than 10^8 is insulating) would inherently be present in the lamination. See MPEP 2112.

As to Claim 11, Honda discloses the laminate is used for any of a transformer, an inductor or an antenna (transformer [0002]).

As to Claim 12, Honda discloses the laminate is used for a magnetic core (laminated iron core, [0001]) material of a stator or a rotor of a motor or a generator (rotating machine, [0002]).

As to Claim 13, Honda discloses the laminate high molecular compound is selected from the group consisting of a polyimide resin, a silicon-containing resin, a ketone resin, a polyamide resin, a liquid crystal polymer, a nitrile resin, a thioether resin, a polyester resin, an arylate resin, a sulfone resin, an imide resin, and an amide-imide resin (thermoplastic, silicone and epoxy resin, [0003 & 0014]).

As to Claim 14, Honda discloses the laminate high molecular compound is selected from the group consisting of a polyimide resin, a sulfone resin, and an amide-imide resin (the foaming agent include sulfonyl (a sulfone) and AZOJI amide (an amide) [0015]).

As to Claim 15, Honda discloses a laminate comprising two or more magnetic metal thin plates [0007 & 0025]. Each magnetic metal thin plate being selected from the group consisting of an amorphous metal plate and a nano crystal magnetic plate (magnetic steel sheet (electrical sheet) may be non-directional, 1-directional, 2-way natural (amorphous or crystalline) [0013]) and coated with a high molecular compound (adhesive resin) [0006]. The two or more magnetic metal thin plates are partially in contact with one another (see drawing 2). By applying a pressure the high molecular compound is positioned between the two or more magnetic metal thin plates and is pushed out (pressure is applied at the time of heat pressing, see drawing 2).

Regarding the volume resistivity defined in JIS H 0505 in a direction perpendicular to the high molecular compound surface of the magnetic metal thin plates is from 0.1 Ohm cm to less than 10^8 Ohm cm. Honda discloses the lamination magnetic steel sheet should provide sufficient resistance between layers and is obtained by having thicknesses of the adhesive between 0.05 and 25 microns [0027].

Given the similarity of materials used (magnetic sheet) and a laminating adhesive (thermoplastic or thermoset resin) which may includes a metallic compound (decomposition accelerator, [0019]) between the plates, the range of volume resistivity from 0.1 Ohm cm (non insulating) to 10^8 (greater than 10^8 is insulating) would inherently be present in the lamination. See MPEP 2112.

As to Claim 15, Honda discloses the laminate high molecular compound layer covers not less than 50% of the area of the two or more magnetic metal thin plates (see drawing 2).

Regarding the volume resistivity defined in JIS H 0505 in a direction perpendicular to the high molecular compound surface of the two or more magnetic metal thin plates is from 1 Ohm cm to less than 10^6 Ohm cm.

Given the similarity of materials used (magnetic sheet) and a laminating adhesive which may includes a metallic compound (decomposition accelerator, [0019]) between the plates, the range of volume resistivity from 0.1 Ohm cm (non insulating) to 10^8 (greater than 10^8 is insulating) would inherently be present in the lamination. See MPEP 2112.

As to Claim 17 & 18, Honda discloses the laminate according to claim 1, wherein the number of magnetic metal thin plates is five or more (see drawing 4, laminated iron core, [0037]).

As to Claim 19 & 20, Honda discloses the laminate high molecular compound comprises a thermoplastic resin [0003].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 3 & 9-10 rejected under 35 U.S.C. 103(a) as being unpatentable over Honda et al. JP 2002-260910.

As to Claim 3, Honda discloses the lamination of a magnetic steel sheet.

Honda is silent with regard to the laminate with two or more kinds of magnetic metal thin plates. However, Honda discloses the magnetic steel sheet (electrical sheet) may be non-directional, 1-directional, 2-way natural (amorphous or crystalline). The

chemical composition of the sheet is nonlimiting and is dependent on the thickness of the magnetic metal sheet [0013]. The lamination between the two or more magnetic sheets provide for a controlling thickness deviation and an adhesive that is fully pasted by the glue line [0005] and can be used in applications such items and rotating machines and transformers [0002].

It would have been obvious to select two or more kinds of magnetic metal thin plates in order to be used in applications such as rotating machines and transformers. One would have been motivated to use two or more kinds of magnetic metal thin plates in order to control the thicknesses of the magnetic sheets and provide a fully pasted up glue line between the sheets. One of ordinary skill would consider using different kinds of magnetic metal thin plates based on surface roughness for better adhesion or economic considerations. Additionally, one of ordinary skill in the art would have selected two or more kinds of magnetic metal thin plates depending on the application of the laminate such as in the case of a rotating machine or a transformer.

As to Claim 9, Honda discloses the laminate is used for any of a transformer, an inductor and an antenna (transformer [0002]).

As to Claim 10, Honda discloses the laminate is used for a magnetic core (laminated iron core, [0001]) material of a stator or a rotor of a motor or a generator (rotating machine, [0002]).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GARY D. HARRIS whose telephone number is (571)272-6508. The examiner can normally be reached on 8AM - 5PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Ruthkosky can be reached on 571-272-1291. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Ruthkosky/
Supervisory Patent Examiner, Art Unit 1785

/G. D. H./Gary Harris
Examiner, Art Unit 1785